

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

To:

see form PCT/ISA/220

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/EP2004/009491

International filing date (day/month/year)
25.08.2004

Priority date (day/month/year)
27.08.2003

International Patent Classification (IPC) or both national classification and IPC
C08L23/08

Applicant
BOREALIS TECHNOLOGY OY

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☒ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☒ Box No. VII Certain defects in the international application
- ☒ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

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WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

10/569334
International application No.
PCT/EP2004/009491

IAP20 Rec'd PCT/PTO 21 FEB 2006

Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
 - ☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material:
 - ☐ a sequence listing
 - ☐ table(s) related to the sequence listing
 - b. format of material:
 - ☐ in written format
 - ☐ in computer readable form
 - c. time of filing/furnishing:
 - ☐ contained in the international application as filed.
 - ☐ filed together with the international application in computer readable form.
 - ☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/EP2004/009491

Box No. II Priority

1. ☒ The following document has not been furnished:

☒ copy of the earlier application whose priority has been claimed (Rule 43*bis*.1 and 66.7(a)).

☐ translation of the earlier application whose priority has been claimed (Rule 43*bis*.1 and 66.7(b)).

Consequently it has not been possible to consider the validity of the priority claim. This opinion has nevertheless been established on the assumption that the relevant date is the claimed priority date.

2. ☐ This opinion has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rules 43*bis*.1 and 64.1). Thus for the purposes of this opinion, the international filing date indicated above is considered to be the relevant date.

3. Additional observations, if necessary:

Box No. V Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	
	No: Claims	1-14
Inventive step (IS)	Yes: Claims	
	No: Claims	1-14
Industrial applicability (IA)	Yes: Claims	1-14
	No: Claims	

2. Citations and explanations

see separate sheet

Box No. VII Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

see separate sheet

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

see separate sheet

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING
AUTHORITY (SEPARATE SHEET)**

PCT/EP2004/009491

Re Item V

Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

Reference is made to the following documents:

D1 : EP0393959 (cited in the application)

D2 : EP1188793

D3 : EP1245730

Novelty (Art. 33 (2) PCT)

1. Document D1 discloses a flame retardant polymer composition comprising an organic polymer e.g. ethylene-butyl acrylate copolymer, a silicone fluid or gum (2-8 %) e.g. polydimethylsiloxane, and an inorganic filler (15-50 %) e.g. calcium carbonate. The inorganic filler can be present in the composition in an amount of 15-50 % (claim 11) and can have a particle size between 0.5-2 microns (page 3 line 46). The polydimethylsiloxane is present in the composition in an amount of 2-8 % (claim 11). Neither a hydroxide nor a hydrated compound is present in the composition (claim 1). The composition is used in wire or cable applications (claim 13). Although the parameter of the inorganic filler, "aspect ratio" mentioned in claim 7, is not indicated in the prior art document, the subject-matter of claims 1-14 is not novel in the sense of (Art. 33(2) PCT), until the applicant can show that this parameter is not implicit to the composition disclosed in the prior art.

2. The document D2 discloses a flame retardant composition comprising a polycarbonate, an inorganic filler e.g. calcium carbonate and an anti-drip agent. Optionally, the polycarbonate can be blended with an other thermoplastic resin like a polyolefin e.g. polypropylene or polyethylene (page 7 line 51). The anti-drip agent can be e.g. a nano-filler or a polydimethylsiloxane, and is present in the composition in an amount up to 5 part by weight based on 100 part of the composition (claim 1). The composition further comprises an inorganic filler e.g. calcium carbonate, present in an amount of 2-60 parts by weight based on 100 parts of the composition and characterised by a particle size of 0.2-20 microns (page 8 line 32). The subject-matter of claims 1-12 is not novel in the sense of (Art. 33(2) PCT), until the applicant can show that the parameter "aspect ratio" of the inorganic filler is not implicit to the composition disclosed in the prior art.

Inventive step (Art. 33(3) PCT)

Document D2 discloses a flame retardant polymer composition comprising an organic polymer e.g. ethylene-butyl acrylate copolymer, a silicone fluid or gum (2-8 %) e.g. polydimethylsiloxane, and an inorganic filler (15-50 %) e.g. calcium carbonate.

The subject-matter of present claim 1-14 differs from this prior art in

A) the particle size of the inorganic filler smaller than 0.5 micron

B) the aspect ratio of the inorganic filler below 5

There is no evidence found in the present application in relation to the closest prior art (document D1) showing that the distinguishable feature A, being the particle size of the inorganic filler leads to an effect. Beside this, there is also no evidence found by comparative examples in the present application showing that the distinguishable feature B, being the aspect ratio of the organic filler leads to an effect.

The problem to be solved by the present invention may therefore be regarded as providing a further composition.

Therefore, the solution as proposed in the present application cannot be considered as involving an inventive step (Art. 33 (3) PCT). Inorganic fillers e.g. calcium carbonate having a particle size smaller than 0.5 micron and an aspect ratio of below 5 are known from the prior art (document D3 EP1245730).

Re Item VII

Certain defects in the international application

Contrary to the requirements of Rule 5.1(a)(ii) PCT, the relevant background art disclosed in document D2 is not mentioned in the description, nor is this document identified therein.

Clarity (Art. 6 PCT)

1. Claim 5 is not supported by the description as required by Article 84 EPC. According to the claim, the composition does not contain a hydroxide nor a hydrated compound. The description on page 10 disclose that a hydroxide or hydrated compound can be present in the composition.

This inconsistency between the claim and the description leads to doubt concerning the matter for which protection is sought, thereby rendering the claim unclear. The applicant is invited to clarify the claim conform article 6 PCT.

2. The specification for an European application should be capable of being understood without reference to any other document. The expression "hereby incorporated by reference" found in the description is therefore not according to the EPC requirements.